

(Model.)

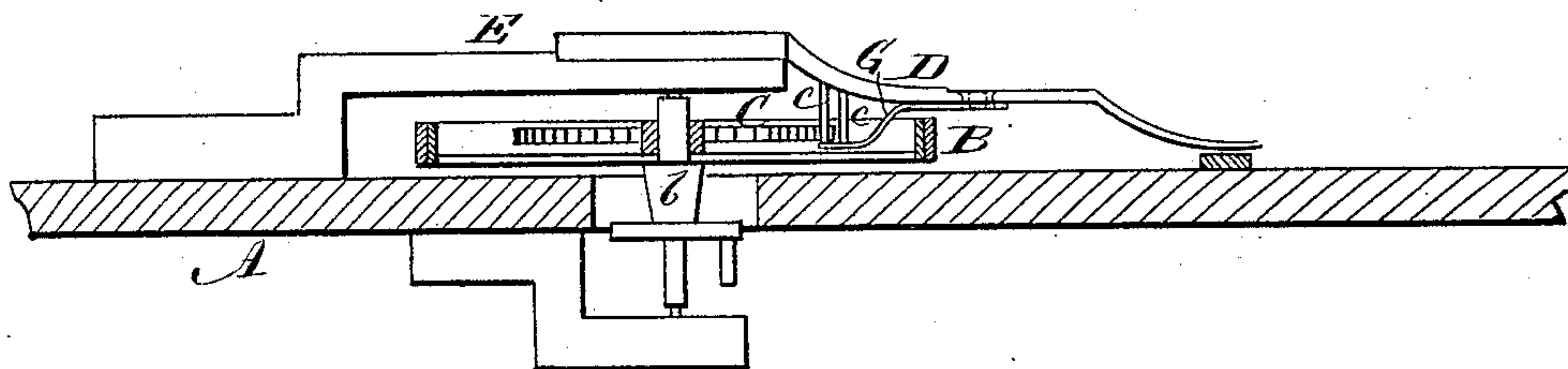
G. F. JOHNSON.

HAIR SPRING REGULATING PIN FOR WATCHES.

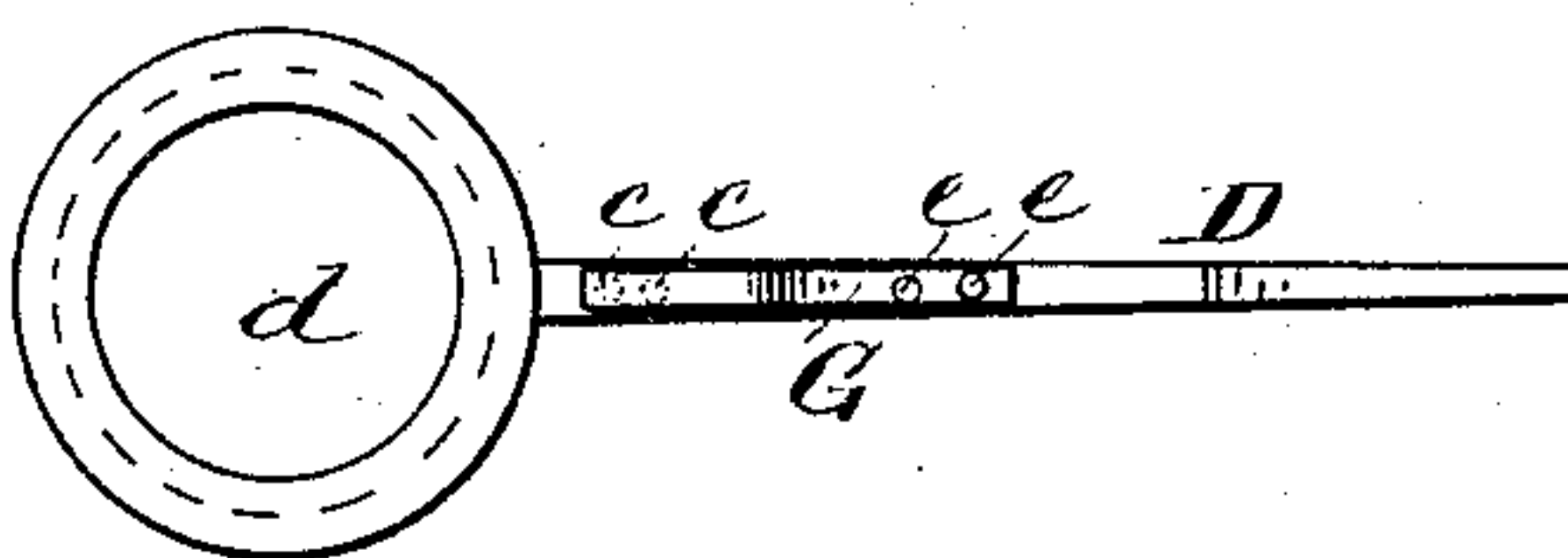
No. 305,821.

Patented Sept. 30, 1884.

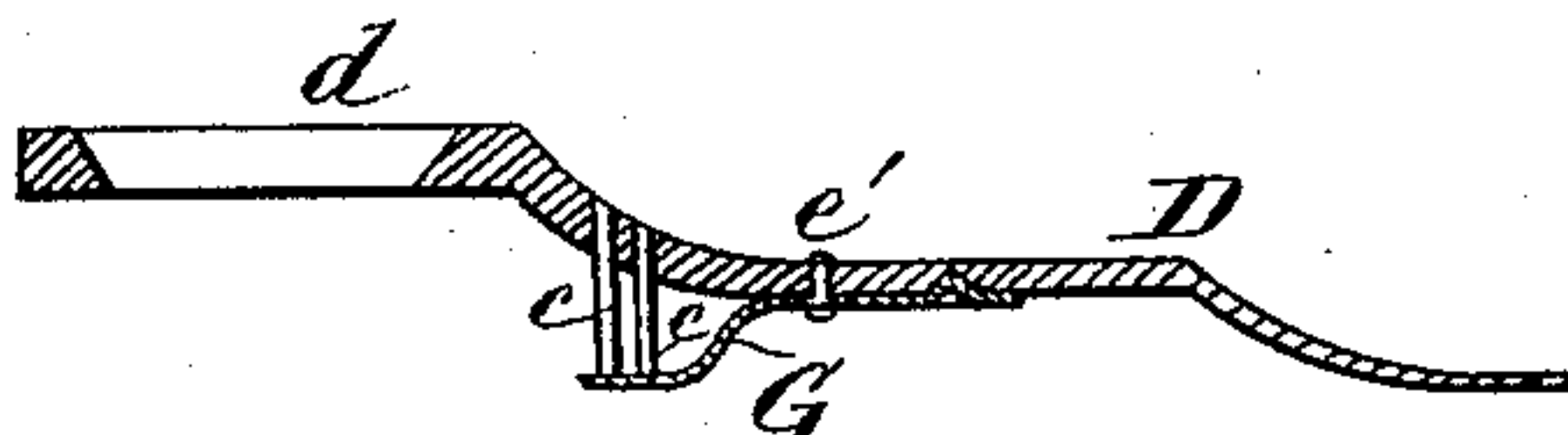
*Fig. 1*



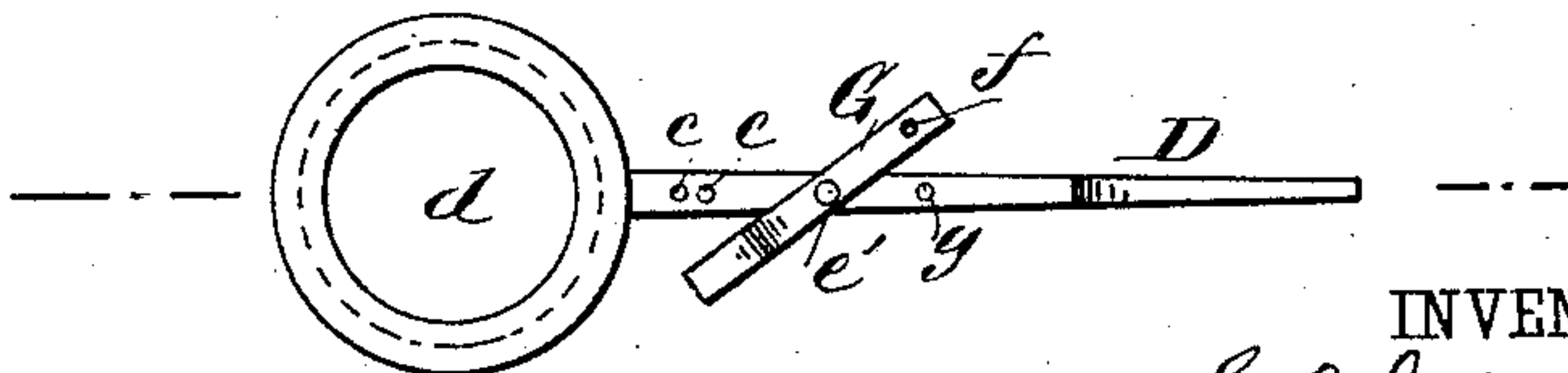
*Fig. 2*



*Fig. 3*



*Fig. 4*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE F. JOHNSON, OF AURORA, ILLINOIS.

## HAIR-SPRING-REGULATING PIN FOR WATCHES.

SPECIFICATION forming part of Letters Patent No. 305,821, dated September 30, 1884.

Application filed April 10, 1884. (Model.)

*To all whom it may concern:*

Be it known that I, GEORGE F. JOHNSON, of Aurora, in the county of Kane and State of Illinois, have invented certain new and useful  
5 Improvements in Hair-Spring-Holding Attachments for the Regulators of Watches, of which the following is a full, clear, and exact description.

This invention consists in the construction  
10 and combination of parts, as will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate  
15 corresponding parts in all the figures.

Figure 1 represents a vertical partly-sectional view, upon an enlarged scale, of a watch mechanism in part with the invention applied; and Fig. 2, an under view of the regu-  
20 lator with my improved device applied thereto. Fig. 3 is a vertical longitudinal section, and Fig. 4 an under view, of the regulator, showing my invention under a modified form of construction applied.

In Figs. 1 and 2 of the drawings, A indicates the watch-plate, up through which the balance-wheel staff *b* projects; B, the balance-wheel; C, the hair-spring, and D the regulator, arranged to embrace, by its curbs or pins *c c*,  
30 an outer coil of said spring, and fitted to work by its eye *d* on the cock or bridge E.

Rigidly attached, as by rivets *e* or otherwise, to the under side of the regulator, is the device for holding the hair-spring of the watch  
35 in position, and for preventing the coils of the spring not embraced by the curbs from catching. This device is in the form of a bent spring, G, the free end of which covers or closes the lower end of the opening between  
40 the regulator-pins, whereby the coil of the spring embraced by said pins is prevented from being jarred out, and the other coils of the spring are prevented from being entan-

gled with the pins. By simply pressing down the device or spring G, however, sufficiently  
45 for the purpose, the coil of the hair-spring which the curbs or pins *c c* are designed to control may readily be entered within or removed from between the regulator-pins, as required, without disturbing the regulator-pins,  
50 that should be rigid attachments to the regulator.

Instead of the device or spring G being a rigid attachment to the regulator, as shown in Figs. 1 and 2, and being adjustable in a  
55 downward direction to expose the opening between the outer or lower ends of the pins *c c*, it may, as shown in Figs. 3 and 4, be pivoted to the regulator, as at *e'*, to swing laterally in the manner of a button, for the purpose of en-  
60 tering or removing the controllable coil of the spring within or from between the pins *c c*, and may be retained in a closed position on the exposed ends of said pins, either by forming its inner end with a notched or depressed  
65 part arranged to spring over the ends of the pins, or by making said inner end with a projection arranged to drop into notches in the ends of the pins, or, as shown in the drawings, by making the opposite or outer end of the de-  
70 vice G with a teat or projection, *f*, arranged to spring into a notch or countersunk hole, *g*, in the under side of the regulator.

Having thus described my invention, I claim  
75 as new and desire to secure by Letters Patent—

The combination, with the regulator D and its curbs or pins *c c*, of the spring G, attached to the regulator, and constructed or arranged to close by its tension on or against the under  
80 or exposed ends of the regulator-pins, essentially as and for the purposes described.

GEORGE F. JOHNSON.

Witnesses:

WM. H. DAY,

M. O. SOUTHWORTH.